

What is claimed is:

1. In a system for measuring the relative locations of points on a vehicle, which system includes plural electromagnetic radiation sources adapted to be fixed relative to the vehicle and plural electromagnetic radiation receivers at a receiving location and a processor coupled to the sources and to the receivers and operating under control of a stored program for determining angles between each receiver and each source which is in the field of view of the receiver, the improvement comprising:

a display device coupled to the processor, and  
the processor program including a routine for monitoring each receiver and generating on the display device a graphical display indicating for each source and each receiver whether or not the source is in the field of view of the receiver.

2. The system of claim 1, wherein the system includes at least three sources and at least three receivers.

3. The system of claim 1, wherein the sources are fixed relative to each other.

4. The system of claim 1, wherein the sources are LED's and the receivers are camera sensors.

5. The system of claim 1, wherein the graphical display includes representations of the sources and the receivers.

6. The system of claim 5, wherein the graphical display includes for each receiver a line drawn between that receiver and each source which is outside its field of view.

7. The system of claim 5, wherein the graphical display includes color-coded indications of whether or not a depicted receiver can see all sources.

8. In a system for measuring the relative locations of points on a vehicle, which system includes at least one electromagnetic radiation source disposed on a hand-held probe and

plural electromagnetic radiation receivers at a receiving location and a processor coupled to the probe and to the receivers and operating under control of a stored program for determining angles between the source and each receiver which has the source in its field of view, the improvement comprising:

an indicator on the hand-held probe, and

the processor program including a routine for monitoring each receiver and causing the indicator to operate in a first mode if the source is in the field of view of all of the receivers and in a second mode if the source is in the field of view of all but one of the receivers.

9. The system of claim 8 wherein the first mode is a steadily on mode and the second mode is an intermittently on mode.

10. The system of claim 9 wherein the indicator is steadily off if the source is outside the field of view of more than one receiver.

11. The system of claim 8, wherein the at least one source includes plural sources.

12. The system of claim 11, wherein the indicator operates in the first mode if all sources are in the field of view of all receivers and in the second mode if no more than one source is outside the field of view of any receiver.

13. The system of claim 8, wherein the at least one source is an LED and each receiver is a camera sensor.

14. The system of claim 8, wherein the indicator is an optical indicator.

15. The system of claim 8, wherein the hand-held probe has associated therewith a switch to activate a measurement of the position of the probe, the program routine being responsive to actuation of the switch to momentarily turn the indicator on if the probe location is successfully measured.

16. In a system for measuring the relative locations of points on a vehicle, which system includes plural first electromagnetic radiation sources adapted to be fixed relative to the vehicle and at least one second electromagnetic radiation source on a hand-held probe and plural electromagnetic radiation receivers at a receiving location and a processor coupled to the probe and to the sources and to the receivers and operating under control of a stored program for determining angles between each receiver and each source which is in the field of view of the receiver, the improvement comprising:

a display device coupled to the processor, and

an indicator on the hand-held probe,

the processor program including a first routine for monitoring each receiver and generating on the display device a graphical display indicating for each first source and each receiver whether or not the first source is in the field of view of the receiver,

the processor program including a second routine for monitoring each receiver and causing the indicator to operate in a first mode if the at least one second source is in the field of view of all of the receivers and in a second mode if the at least one second source is in the field of view of all but one of the receivers.

17. The system of claim 16, wherein the first and second sources are LED's and the receivers are camera sensors.

18. The system of claim 16, wherein the first sources are fixed relative to one another.

19. The system of claim 16, wherein the second sources are fixed relative to one another.

20. The system of claim 16, wherein the graphical display includes representations of the first sources and the receivers.

21. The system of claim 20, wherein the graphical display includes for each receiver a line drawn between that receiver and each first source which is outside its field of view.

22. The system of claim 16, wherein the first mode is a steadily on mode and the second mode is an intermittently on mode.

23. The system of claim 16, wherein the indicator is an optical indicator.

24. In a method of measuring the relative locations of points on a vehicle by determining angles between each of plural electromagnetic radiation receivers and each of plural electromagnetic radiation sources which is in the field of view of the receiver, the improvement comprising:

monitoring each receiver to determine which sources are in its field of view, and  
providing an indication as to whether or not any source is outside the field of view of any receiver and, if so, identifying which source or sources and which receiver or receivers.

25. The method of claim 24, wherein the providing step includes providing a graphical display indicating for each source and each receiver whether or not the source is in the field of view of the receiver.

26. The method of claim 25, wherein the graphical display includes for each receiver a line drawn between that receiver and each source which is outside its field of view.

27. The method of claim 24, and further comprising providing a hand-held probe including at least one second electromagnetic radiation source, and providing in association with the probe an indication as to whether or not the at least one second source is in the field of view of all of the receivers.

28. The method of claim 27, wherein the providing of an indication at the hand-held probe, includes operating an indicator in a first mode if the at least one second source is in the field of view of all of the receivers and in a second mode if the at least one second source is in the field of view of all but one of the receivers.